FIG. 1A

1531 Slb1 →
GAGATTAGAACACCATTGAATGGGATTATTGGWATGACYCAGTTGTCRCTTGATACAGAA 1590
GluIleArgThrProLeuAsnGlyIleIleGlyMetThrGlnLeuSerLeuAspThrGlu 530
H1

TTGACRCAGTACCAACGAGAGATGTTGTCGATTGTGCATAACTTGGCAAATTCCTTGTTG 1650
LeuThrGlnTyrGlnArgGluMetLeuSerIleValHisAsnLeuAlaAsnSerLeuLeu 550

ACCATTATAGACGATATATTGGATATTTCTAAGATTGAGGCGAATAGAATGACGGTGGAA 1710
ThrIleIleAspAspIleLeuAspIleSerLysIleGluAlaAsnArgMetThrValGlu 570

CAGATTGATTTTTCATTAAGAGGGACAGTGTTTGGTGCATTGAAAACGTTAGCCGTCAAA 1770
GlnIleAspPheSerLeuArgGlyThrValPheGlyAlaLeuLysThrLeuAlaValLys 590

GCTATTGAAAAAAACCTAGACTTGACCTATCAATGTGATTCATCGTTTCCAGATAATCTT 1830
AlaIleGluLysAsnLeuAspLeuThrTyrGlnCysAspSerSerPheProAspAsnLeu 610

ATTGGAGATAGTTTTAGATTACGACAAGTTATTCTTAACTTGGCTGGTAATGCTATTAAG 1890
IleGlyAspSerPheArgLeuArgGlnValIleLeuAsnLeuAlaGlyAsnAlaIleLys 630
N

TTTACTAAAGAGGGGAAAGTTAGTGTTAGTGTGAAAAAGTCTGATAAAATGGTGTTAGAT 1950
PheThrLysGluGlyLysValSerValSerValLysLysSerAspLysMetValLeuAsp 650

AGTAAGTTGTTGTTAGAGGTTTGTGTTAGCGACACGGGAATAGGTATAGAGAAAGACAAA 2010
SerLysLeuLeuLeuGluValCysValSerAspThrGlyIleGlyIleGluLysAspLys 670
G1

TTGGGATTGATTTTCGATACCTTCTGTCAAGCTGATGGTTCTACTACAAGAAAGTTTGGT 2070
LeuGlyLeuIlePheAspThrPheCysGlnAlaAspGlySerThrThrArgLysPheGly 690
← Slb2

GGTACAGGTTTAGGGTTGTCAATTTCCAAACAGTTGATACATTTAATGGGTGGAGAGATA 2130
GlyThrGlyLeuGlyLeuSerIleSerLysGlnLeuIleHisLeuMetGlyGlyGluIle 710
G2

TGGGTTACTTCGGAGTATGGATCCGGRTCAAACTTTTATTTTACGGTGTGCGTGTCGCCA 2190
TrpValThrSerGluTyrGlySerGlySerAsnPheTyrPheThrValCysValSerPro 730

TCTAATATTAGATATACTCGACAAACCGAACAATTGTTACCATTTAGTTCCCATTATGTG 2250
SerAsnIleArgTyrThrArgGlnThrGluGlnLeuLeuProPheSerSerHisTyrVal 750

TTATTTGTATCGACTGAGCATACTCAAGAAGAACTTGATGTGTTGAGAGATGGAATTATA 2310
LeuPheValSerThrGluHisThrGlnGluGluLeuAspValLeuArtAspGlyIleIle 770

FIG. 1B

```
GAACTTGGATTGATACCTATAATAGTGAGAAATATTGAAGATGCAACATTGACTGAGCCG 2370
GluLeuGlyLeuIleProIleIleValArgAsnIleGluAspAlaThrLeuThrGluPro  790

GTGAAATATGATATAATTATGATTGATTCGATAGAGATTGCCAAAAAGTTGAGGTTGTTA 2430
ValLysTyrAspIleIleMetIleAspSerIleGluIleAlaLysLysLeuArgLeuLeu  810

TCGGAGGTTAAATATATTCCGTTGGTTTTGGTCCATCATTCTATTCCACAGTTGAATATG 2490
SerGluValLysTyrIleProLeuValLeuValHisHisSerIleProGlnLeuAsnMet  830

AGAGTATGTATTGATTTGGGGATATCTTCCTATGCAAATACGCCATGTTCGATCACGGAC 2550
ArgValCysIleAspleuGlyIleSerSerTyrAlaAsnThrProCysSerIleThrAsp  850

TTGGCCAGTGCGATTATACCAGCGTTGGAGTCGAGATCTATATCACAGAACTCAGACGAG 2610
LeuAlaSerAlaIleIleProAlaLeuGluSerArgSerIleSerGlnAsnSerAspGlu  870

TCGGTGAGGTACAAAATATTACTAGCAGAGGACAACCTCGTCAATCAGAAACTTGCAGTT 2670
SerValArgTyrLysIleLeuLeuAlaGluAspAsnLeuValAsnGlnLysLeuAlaVal  890

AGGATATTAGAAAAGCAAGGGCATCTGGTGGAAGTAGTTGAGAACGGACTCGAGGCGTAC 2730
ArgIleLeuGluLysGlnGlyHisleuValGluValValGluAsnGlyLeuGluAlaTyr  910
                                                 ←—— Slb3
GAAGCGATTAAGAGGAATAAATATGATGTGGTGTTGATGGATGTGCAAATGCCT       2784
GluAlaIleLysArgAsnLysTyrAspValValLeuMetAspValGlnMetPro        928
                                                 D
```

FIG. 2A

ATGAACCCCACTAAAAAACCTCGGTTATCACCAATGCAGCCCTCTGTTTTTGAAATACTC 60
MetAsnProThrLysLysProArgLeuSerProMetGlnProSerValPheGluIleLeu 20

AACGACCCTGAGCTTTATAGTCAGCACTGTCATAGCCTTAGGGAAACACTTCTTGATCAT 120
AsnAspProGluLeuTyrSerGlnHisCysHisSerLeuArgGluThrLeuLeuAspHis 40

TTCAACCATCAAGCTACACTTATCGACACTTATGAACATGAACTAGAAAAATCCAAAAAT 180
PheAsnHisGlnAlaThrLeuIleAspThrTyrGluHisGluLeuGluLysSerLysAsn 60

GCCAACAAAGCGTCCCAACAAGCACTTAGTGAAATAGGTACAGTTGTTATATCTGTTGCC 240
AlaAsnLysAlaSerGlnGlnAlaLeuSerGluIleGlyThrValValIleSerValAla 80

ATGGGAGACTTGTCGAAAAAAGTTGAGATTCACACAGTAGAAAATGACCCTGAGATTTTA 300
MetGlyAspLeuSerLysLysValGluIleHisThrValGluAsnAspProGluIleLeu 100

AAAGTCAAAATCACCATCAACACCATGATGGATCAATTACAGACATTTGCTAATGAGGTT 360
LysValLysIleThrIleAsnThrMetMetAspGlnLeuGlnThrPheAlaAsnGluVal 120

ACAAAAGTCGCCACCGAAGTCGCAAATGGTGAACTAGGTGGACAAGCGAAAAATGATGGA 420
ThrLysValAlaThrGluValAlaAsnGlyGluLeuGlyGlyGlnAlaLysAsnAspGly 140

TCTGTTGGTATTTGGAGATCACTTACAGACAATGTTAATATTATGGCTCTTAATTTAACT 480
SerValGlyIleTrpArgSerLeuThrAspAsnValAsnIleMetAlaLeuAsnLeuThr 160

AACCAAGTGCGAGAAATTGCTGATGTCACACGTGCTGTTGCCAAGGGGGACTTGTCACGT 540
AsnGlnValArgGluIleAlaAspValThrArgAlaValAlaLysGlyAspLeuSerArg 180

AAAATTAATGTACACGCCCAGGGTGAAATCCTTCAACTTCAACGTACAATAAACACCATG 600
LysIleAsnValHisAlaGlnGlyGluIleLeuGlnGeuGlnArgThrIleAsnThrMet 200

GTGGATCAGTTACGAACGTTTGCATTCGAAGTATCTAAAGTTGCTAGAGATGTTGGTGTG 660
ValAspGlnLeuArgThrPheAlaPheGluValSerLysValAlaArgAspValGlyVal 220

CTTGGTATATTAGGAGGACAAGCGTTGATTGAAAATGTTGAAGGTATTTGGGAAGAGTTG 720
LeuGlyIleLeuGlyGlyGlnAlaLeuIleGluAsnValGluGlyIleTrpGluGluLeu 240

ACTGATAATGTCAATGCCATGGCTCTTAATTTGACTACACAAGTGAGAAATATTGCCAAT 780
ThrAspAsnValAsnAlaMetAlaLeuAsnLeuThrThrGlnValArgAsnIleAlaAsn 260

FIG. 2B

```
GTCACCACTGCCGTTGCCAAGGGGGATTTGTCGAAAAAGTCACTGCTGATTGTAAGGG  840
ValThrThrAlaValAlaLysGlyAspLeuSerLysLysValThrAlaAspCysLycGly  280

GAAATYCTTGATTTGAAACTTACTATTAATCAAATGGTGGACCGATTACAGAATTTTGCT  900
GluIleLeuAspLeuLysLeuThrIleAsnGlnMetValAspArgLeuGlnAsnPheAla  300

CTTGCGGTGACGACATTGTCGAGAGAGGTTGGTACTTTGGGTATTTTGGGTGGACAAGCT  960
LeuAlaValThrThrLeuSerArgGluValGlyThrLeuGlyIleLeuGlyGlyGlnAla  320

AACGTACAGGATGTTGAAGGTGCTTGGAAACAGGTTACAGAAAATGTCAACCTAATGGCT 1020
AsnValGlnAspValGluGlyAla[Trp]LysGlnValThrGluAsnValAsnLeuMetAla  340

ACTAATTTAACTAACCAAGTGAGATCTATTGCTACAGTTACTACTGCAGTTGCGCATGGT 1080
ThrAsnLeuThrAsnGlnValArgSerIleAlaThrValThrThrAlaValAlaHisGly  360

GATTTGTCGCAAAAGATTGATGGTCATCCCAAAGGAGAGATTTTACAATTGAAAAATACA 1140
AspLeuSerGlnLysIleAspGlyHisProLysGlyGluIleLeuGlnLeuLysAsnThr  380

ATCAACAAGATGGTGGACTCTTTGCAGTTGTTTGCATCAGAAGTGTCGAAAGTGGCACAA 1200
IleAsnLysMetValAspSerLeuGlnLeuPheAlaSerGluValSerLysValAlaGln  400

GATGTTGGTATTAATGGAAAATTAGGTATTCAAGCACAAGTTAGTGATGTTGATGGATTA 1260
AspValGlyIleAsnGlyLysLeuGlyIleGlnAlaGlnValSerAspValAspGlyLeu  420

TGGAAGGAGATTACGTCTAATGTAAATACCATGGCTTCAAATTTAACTTCGCAAGTGAGA 1320
[Trp]LysGluIleThrSerAsnValAsnThrMetAlaSerAsnLeuThrSerGlnValArg  440

GCTTTTGCACAGATTACTGCTGCTGCTACTGATGGGGATTTCACTAGATTTATTACTGTT 1380
AlaPheAlaGlnIleThrAlaAlaAlaThrAspGlyAspPheThrArgPheIleThrVal  460

GAAGCACTGGGAGAGATGGATGCGTTGAAAACAAAGATTAATCAAATGGTGTTTAACTTA 1440
GluAlaLeuGlyGluMetAspAlaLeuLysThrLysIleAsnGlnMetValPheAsnLeu  480

AGGGAATCGCTTCAAAGGAATACTGCGGCTAGAGAAGCTGCTGAGTTGGCCAATAGTGCG 1500
ArgGluSerLeuGlnArgAsnThrAlaAlaArgGluAlaAlaGluLeuAlaAsnSerAla  500

AAATCCGAGTTTTTAGCAAACATGTCGCATGAGATTAGAACACCATTGAATGGGATTATT 1560
LysSerGluPheLeuAlaAsnMetSerHisGluIleArgThrProLeuAsnGlyIleIle  520
                                                        H1
```

FIG. 2C

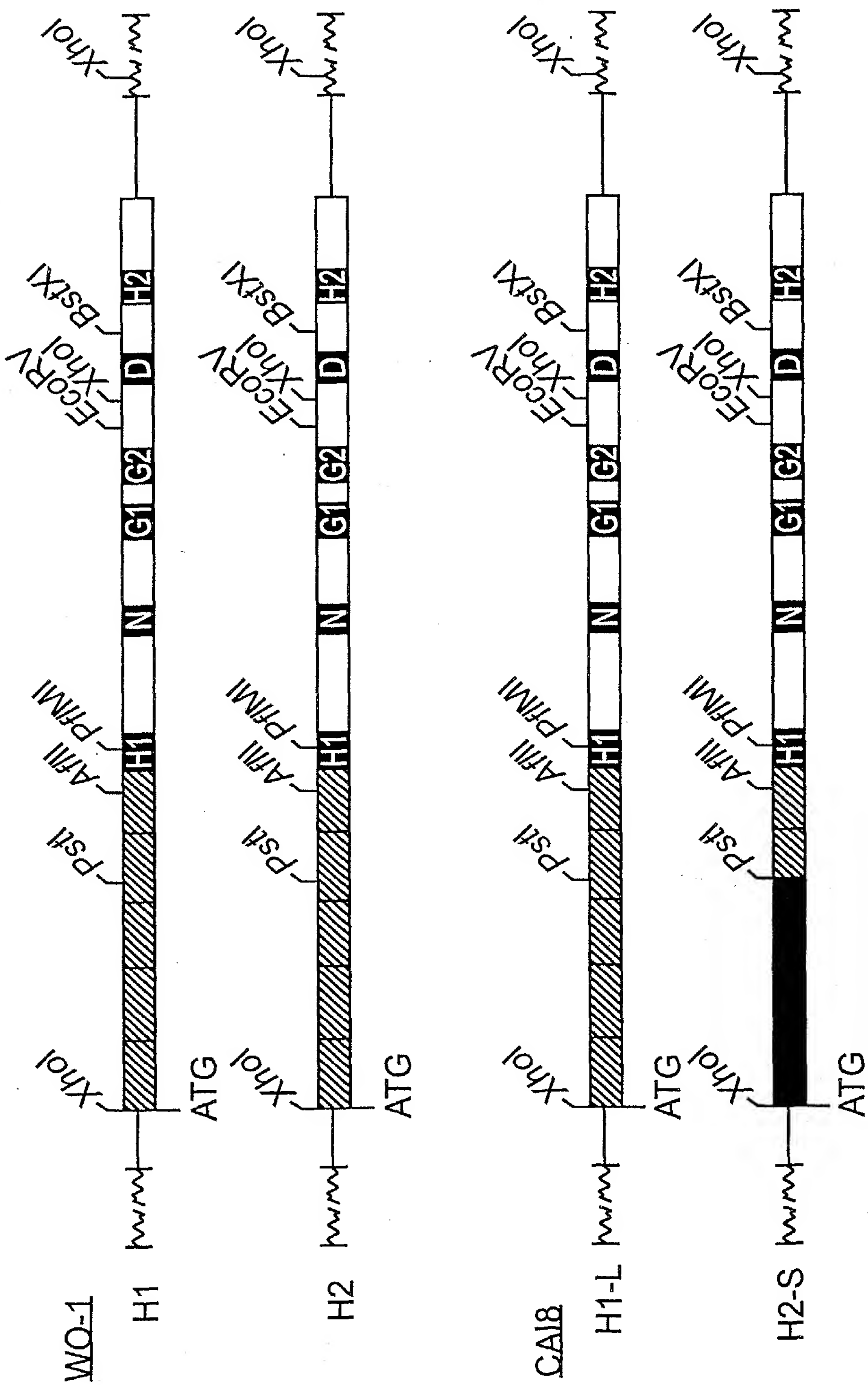
```
GGWATGACYCAGTTGTCRCTTGATACAGAGTTGACRCAGTACCAACGAGAGATGTTGTCG 1620
GlyMetThrGlnLeuSerLeuAspThrGluLeuThrGlnTyrGlnArgGluMetLeuSer  540

ATTGTGCATAACTTGGCAAATTCCTTGTTGACCATTATAGACGATATATTGGATATTTCT 1680
IleValHisAsnLeuAlaAsnSerLeuLeuThrIleIleAspAspIleLeuAspIleSer  560

AAGATTGAGGCGAATAGAATGACGGTGGAACAGATTGATTTTTCATTAAGAGGGACAGTG 1740
LysIleGluAlaAsnArgMetThrValGluGlnIleAspPheSerLeuArgGlyThrVal  580

TTTGGTGCATTGAAAACGTTAGCCGTCAAAGCTATTGAAAAAAACCTAGACTTGACCTAT 1800
PheGlyAlaLeuLysThrLeuAlaValLysAlaIleGluLysAsnLeuAspLeuThrTyr  600

CAATGTGATTCATCGTTTCCAGATAATCTTATTGGAGATAGTTTTAGATTACGACAAGTT 1860
GlnCysAspSerSerPheProAspAsnLeuIleGlyAspSerPheArgLeuArgGlnVal  620

ATTCTTAACTTGGCTGGTAATGCTATTAAGTTTACTAAAGAGGGGAAAGTTAGTGTTAGT 1920
IleLeuAsnLeuAlaGlyAsnAlaIleLysPheThrLysGluGlyLysValSerValSer  640
                N
GTGAAAAAGTCTGATAAAATGGTGTTAGATAGTAAGTTGTTGTTAGAGGTTTGTGTTAGC 1980
ValLysLysSerAspLysMetValLeuAspSerLysLeuLeuLeuGluValCysValSer  660

GACACGGGAATAGGTATAGAGAAAGACAAATTGGGATTGATTTTCGATACCTTCTGTCAA 2040
AspThrGlyIleGlyIleGluLysAspLysLeuGlyLeuIlePheAspThrPheCysGln  680
  G1
GCTGATGGTTCTACTACAAGAAAGTTTGGTGGTACAGGTTTAGGGTTGTCAATTTCCAAA 2100
AlaAspGlySerThrThrArgLysPheGlyGlyThrGlyLeuGlyLeuSerIleSerLys  700
                                   G2
CAGTTGATACATTTAATGGGTGGAGAGATATGGGTTACTTCGGAGTATGGATCCGGRTCA 2160
GlnLeuIleHisLeuMetGlyGlyGluIleTrpValThrSerGluTyrGlySerGlySer  720

AACTTTTATTTTACGGTGTGCGTGTCGCCATCTAATATTAGATATACTCGACAAACCGAA 2220
AsnPheTyrPheThrValCysValSerproSerAsnIleArgTyrThrArgGlnThrGlu  740

CAATTGTTACCATTTAGTTCCCATTATGTGTTATTTGTATCGACTGAGCATACTCAAGAA 2280
GlnLeuLeuProPheSerSerHisTyrValLeuPheValSerThrGluHisThrGlnGlu  760

GAACTTGATGTGTTGAGAGATGGAATTATAGAACTTGGATTGATACCTATAATAGTGAGA 2340
GluLeuAspValLeuArgAspGlyIleIleGluLeuGlyLeuIleProIleIleValArg  780
```

FIG. 2D

```
AATATTGAAGATGCAACATTGACTGAGCCGGTGAAATATGATATAATTATGATTGATTCG 2400
AsnIleGluAspAlaThrLeuThrGluProValLysTyrAspIleIleMetIleAspSer  800

ATAGAGATTGCCAAAAAGTTGAGGTTGTTATCGGAGGTTAAATATATTCCGTTGGTTTTG 2460
IleGluIleAlaLysLysLeuArgLeuLeuSerGluValLysTyrIleProLeuValLeu  820

GTCCATCATTCTATTCCACAGTTGAATATGAGAGTATGTATTGATTTGGGGATATCTTCC 2520
ValHisHisSerIleProGlnLeuAsnMetArgValCysIleAspLeuGlyIleSerSer  840

TATGCAAATACGCCATGTTCGATCACGGACTTGGCCAGTGCGATTATACCAGCGTTGGAG 2580
TyrAlaAsnThrProCysSerIleThrAspLeuAlaSerAlaIleIleProAlaLeuGlu  860

TCGAGATCTATATCACAGAACTCAGACGAGTCGGTGAGGTACAAAATATTACTAGCAGAG 2640
SerArgSerIleSerGlnAsnSerAspGluSerValArgTyrLysIleLeuLeuAlaGlu  880

GACAACCTCGTCAATCAGAAACTTGCAGTTAGGATATTAGAAAAGCAAGGGCATCTGGTG 2700
AspAsnLeuValAsnGlnLysLeuAlaValArgIleLeuGluLysGlnGlyHisLeuVal  900

GAAGTAGTTGAGAACGGACTCGAGGCGTACGAAGCGATTAAGAGGAATAAATATGATGTG 2760
GluValValGluAsnGlyLeuGluAlaTyrGluAlaIleLysArgAsnLysTyrAspVal  920

GTGTTGATGGATGTGCAAATGCCTGTAATGGGTGGGTTTGAAGCTACGGAGAAGATTCGA 2820
ValLeuMetAspValGlnMetProValMetGlyGlyPheGluAlaThrGluLysIleArg  940
      ------------------
              D
CAATGGGAGAAAAAGTCTAACCCAATTGACTCGTTGACCTTTAGGACTCCAATTATTGCC 2880
GlnTrpGluLysLysSerAsnProIleAspSerLeuThrPheArgThrProIleIleAla  960

CTCACTGCACACGCCATGTTAGGTGATAGAGAAAAGTCATTGGCCAAGGGGATGGACGAT 2940
LeuThrAlaHisAlaMetLeuGlyAspArgGluLysSerLeuAlaLysGlyMetAspAsp  980

TATGTGAGTAAGCCATTGAAGCCGAAATTGTTAATGCAGACGATAAAGAAGTGTATTCAT 3000
TyrValSerLysProLeuLysProLysLeuLeuMetGlnThrIleAsnLysCysIleHis 1000
                  ------------------------------------------
                                                H2
AATATTAACCAGTTGAAAGAATTGTCGAGAAATAGTAGGGGTAGCGATTTTGCAAAGAAG 3060
AsnIleAsnGlnLeuLysGluLeuSerArgAsnSerArgGlySerAspPheAlaLysLys 1020
---------------------------------------

ATGACCCGAAACACACCCGGCCGCACGACCCGTCAGGGGAGTGATGAGGGGAGTGTAAAG 3120
MetThrArgAsnThrProGlySerThrThrArgGlnGlySerAspGluGlySerValLys 1040
```

FIG. 2E

```
GACATGATTGGGGACACTCCCCGTCAAGGGAGTGTGGAGGGAGGGGGTACAAGTAGTAGA 3180
AspMetIleGlyAspThrProArgGlnGlySerValGluGlyGlyGlyThrSerSerArg 1060

CCAGTACAGAGAAGGTCTGCCAGGGAGGGGTCGATCACTACAATTAGTGAACAAATCGAC 3240
ProValGlnArgArgSerAlaArgGluGlySerIleThrThrIleSerGluGlnIleAsp 1080

CGTTAG                                                       3246
Arg***                                                       1082
```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H2
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H1-L
H2-S
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XhoI
PstI
AflII
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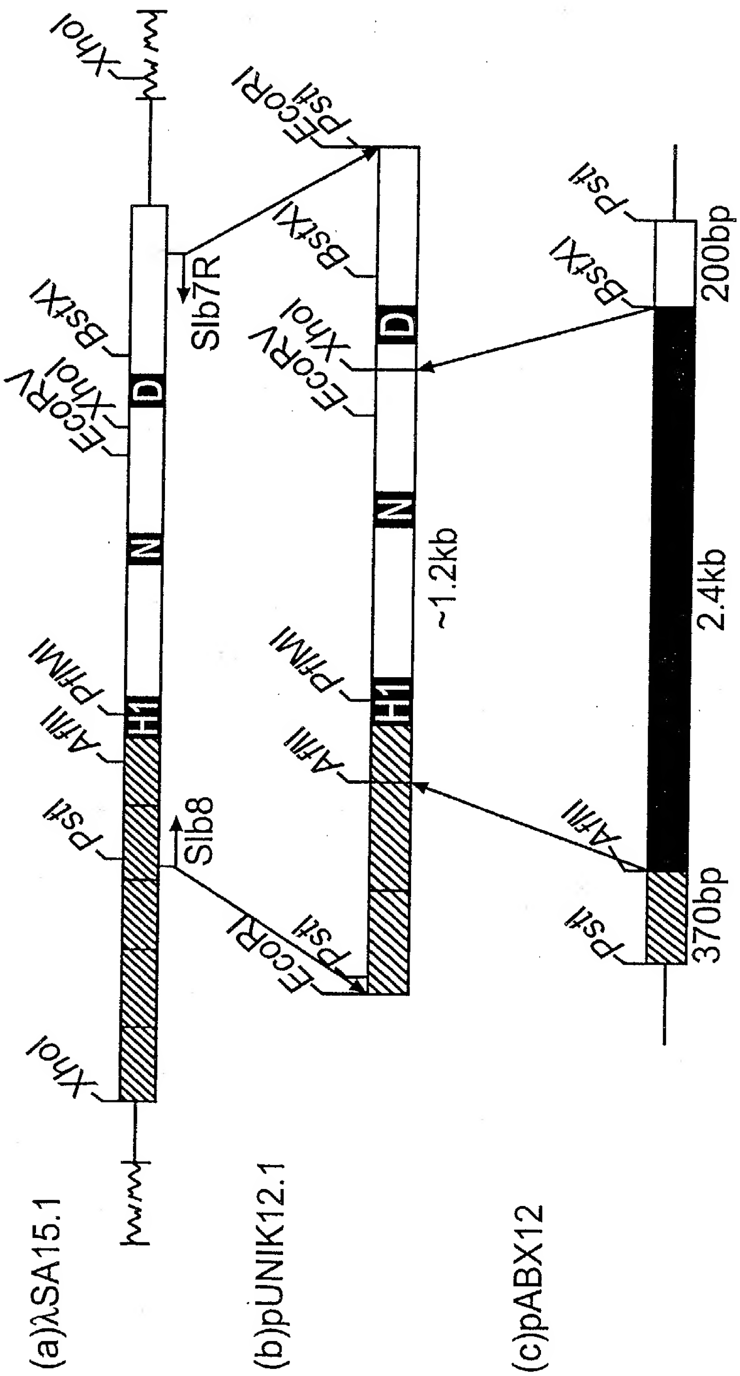
N
G1
G2
EcoRV
XhoI
D
BstXI
H2
XhoI

FIG. 3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PstI
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PflMI
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N
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XhoI
BstXI
Slb7R
Slb8
XhoI
EcoRI
PstI
AflII
PflMI
H1
N
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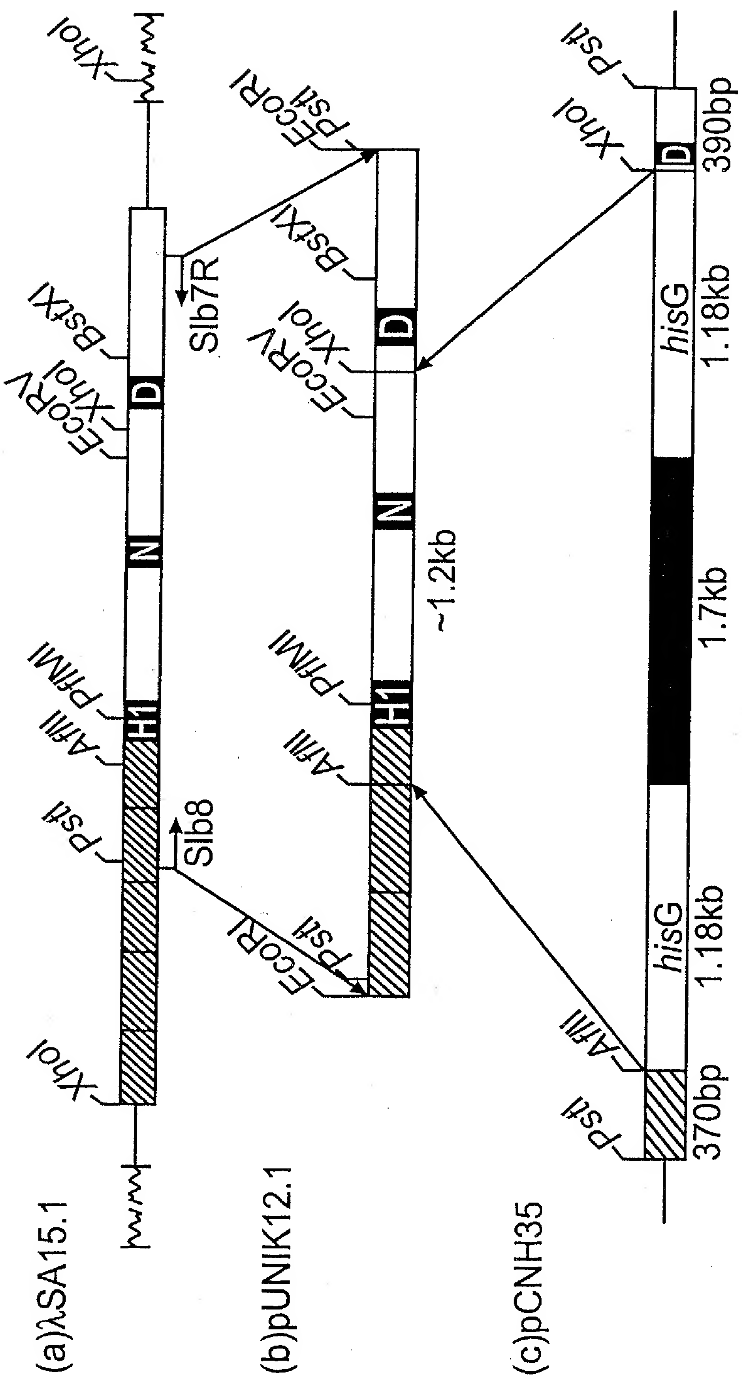
BstXI
200bp
PstI

FIG. 4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EcoRV
PflMI
AflII
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EcoRI
D
N
H1
Slb7R
Slb8
~1.2kb
hisG
390bp
1.18kb
1.7kb
370bp

FIG. 5